3. OCCURRENCE OF THE JAPANESE PIPISTRELLE, *PIPISTRELLUS ABRAMUS* (TEMMINCK, 1840) (CHIROPTERA: VESPERTILIONIDAE) IN MYANMAR (BURMA) AND INDIA

The Japanese Pipistrelle, *Pipistrellus abramus* (Temminck, 1840) has been sporadically reported from India during the last quarter of the nineteenth century and first quarter of the twentieth century. Dobson (1876) listed a number of specimens from different localities of India, as *Vesperugo abramus.* Thomas (1886) reported this species from Manipur. Robinson (1913) recorded *Pipistrellus abramus* from two different localities of erstwhile Assam, now Assam and Arunachal Pradesh. Interestingly, there is no subsequent report of this species from India. Further, it was the general practice in those days to call any small, blackish pipistrelle from India as *Vesperugo* (or *Pipistrellus*) *abramus,* without giving importance to its relative structural and metrical characteristics. It was, therefore, felt necessary to check identification of specimens, labelled as *Pipistrellus abramus,* present in the National Zoological Collections of India, NZCI (maintained by the Zoological Survey of India, ZSI).

None of the specimens listed by Dobson (1876), as far as could be traced till date, are *Pipistrellus abramus.* Some are *Pipistrellus mimus,* others *P. coromandra.* Incidentally, Thomas' (1886) specimen of *Vesperugo abramus* from Manipur was later identified as *P. paterculus* by the same author (Thomas 1915). Of the three examples of *Pipistrellus abramus* reported by Robinson (1913), from Arunachal Pradesh (a male and a female) are still available in NZCI. These are indeed examples of *Pipistrellus abramus,* as understood by Hill and Harrison (1987), even though Robinson (loc. cit.) casually remarked that the specimens were 'typical examples of the Common Indian Pipistrelle'. A further search yielded two more specimens of this species — one from Uttar Pradesh and the other from northern Myanmar (Burma). Since *Pipistrellus abramus,* as it is understood now, has not been authentically reported from India and Myanmar (Burma) (*vide infra*), it was thought desirable to do so here. Description of the specimens are given in the following paragraphs.

Pipistrellus abramus (Temminck)

Vespertilio abramus (Temminck, 1840[1], *Monogr. Mammal.,* 2: 232, pl. 58; figs. 1, 2 (Nagasaki, Kyushu, Japan).

Material Examined: MYANMAR (Burma): 1 female (in spirit, skull extracted): North Shan State: Namkam, R.B.S. Swell, 25 Nov. 1926. INDIA: Arunachal Pradesh: 1 male, 1 female (study skins and skulls, skull of male badly damaged): West Siang district: Abor Hills (now Adi Hills): Rotung (396 m), S.W. Kemp, 10 Mar. 1912; Uttar Pradesh: 1 female (in spirit, skull extracted): Allahabad district: Allahabad, J. Cockburn, 19 Mar. 1977 [this specimen was listed as *Pipistrellus maurus* (= *Pipistrellus savii*) by Anderson 1881, who obviously, could not see the small first upper premolar as the skull was *in situ*].

Measurements: *External*: 1 male: forearm 31.4. 3 females: forearm 31.6, 33.2, 34.4; tibia 10.8, 11.9, 13.0; foot and claw 6.4, 7.5, 7.6. *Cranial*: 1 male: palatal length 4.8; maxillary toothrow (c - m^3) 4.2; molar width (m^3 - m^3) 5.0; mandibular length 8.6; lower toothrow (c - m_3) 4.6. 3 females : greatest length 12.1, 12.7, 13.2; condylobasal length 11.4, 12.5, 12.8: palatal length 5.0, 6.3, 6.4; maxillary toothrow 4.4, 4.8, 4.9; molar width 5.2, 6.0, 6.0; least interorbital width -, 3.8, 4.1; zygomatic width -, -. 8.2, cranial width 6.5, 6.6, 6.8; mandibular length 9.1, 9.9, 10.0; lower toothrow 4.7, 5.2, 5.3.

Both the specimens from Arunachal Pradesh are young adults. In the present material, both maxillary toothrow and lower toothrow are marginally longer than those of the Chinese population given by Allen (1938).

Agrawal and Sinha (1973) in their study on the baculum of some Oriental bats, identified a specimen from Indawagyi Lake, Burma, as *Pipistrellus abramus paterculus* Thomas, whose baculum they thought, was 'doubly curved'. Hill and Harrison (1987) suggested that this specimen, mentioned by Soota and Chaturvedi (1980) on the basis of Agrawal and Sinha (loc. cit.), should possibly be regarded as *P. abramus* (on account of its doubly curved baculum), rather than as *P. paterculus.* We have examined the baculum and skull of the specimen in question and have found that the curvature in the baculum is incipient, and tallies well with the figures of baculum of *P. paterculus* given by Wang (1982) and Hill and Harrison (loc. cit.). Also, dental characteristics (*vide infra*)

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[1]The date of publication of the second volume of C.J. Temminck's 'Monographies de Mammalogie,...', as given on the title page, is '1835 á 1841', meaning 1835 to 1841. Tate (1942) considered the date of publication of *abramus* as 1835, while Osgood (1932) gave it as 1841. Both Blanford (1891) and Wallin (1969) put this date as 1835-41. But, Ellerman and Morrison-Scott (1951), Laurie and Hill (1954) and Corbet (1978) gave the date of publication of *abramus* as 1840. For the sake of stability, we have followed these latter authors.

of this specimen clearly indicate that it is an example of *P. paterculus.*

Pipistrellus abramus is known from Japan (excepting Hokkaido), southern Ussuri region (eastern Siberia), Korea, China (eastern, southeastern and southern areas, including Taiwan, Hong Kong, Hainan and southeastern Tibet) and Vietnam (*vide* Aoki 1913, Thomas 1928, Allen 1938, Tate 1942, Kuzyakin 1950, Romer 1960, Imaizumi 1961, Wang *et al.* 1962, Wallin 1969, Feng *et al.* 1980, Wang 1982, Hill and Harrison 1987). Lekagul and McNeely (1977) have suggested that *abramus* may occur in eastern Thailand. According to Tate (1942), the specimens recorded by Taylor (1934) from the Philippines should be referred to *abramus.* Laurie and Hill (1954) have considered the specimens reported by Shamel (1940) from Celebes (=Sulawesi) as *Pipistrellus javanicus abramus.* However, the distributional range of *abramus* given by Corbet (1978) does not include the Philippines or Sulawesi. Thus, the occurrence of *P. abramus*, as understood by Hill and Harrison (1987), in the Philippines and Sulawesi remains to be confirmed.

The specimen of *Pipistrellus abramus* recorded from Kobo, North Lakhimpur district, Assam, by Robinson (1913) could not be examined. It would, however, not be wrong conjecture to presume that this specimen also was an example of *P. abramus.*

The present specimens form the basis of first authentic record of *Pipistrellus abramus* from India and Myanmar (Burma).

The geographical distribution of *Pipistrellus abramus,* therefore, stands as — Japan (excepting Hokkaido); southern Ussuri region (eastern Siberia); Korean Peninsula; China (eastern, southeastern and southern areas, including Taiwan, Hong Kong, Hainan and southeastern Tibet); Vietnam; possibly eastern Thailand; northern Myanmar (North Shan States); northern India (Uttar Pradesh, ? northern Assam, and Arunachal Pradesh); ? Philippines; ? Sulawesi.

The Japanese Pipistrelle, *Pipistrellus abramus* and the Burmese Pipistrelle, *Pipistrellus paterculus* Thomas, 1915, which occur sympatrically in southern China, northern Myanmar (Burma) and northern India, are very much similar structurally. However, these two species can be separated by the relative size of upper incisors, relative size and position of first upper premolar and by the structure of baculum (Thomas 1915, Wang 1982). In *Pipistrellus paterculus,* second upper incisor does not attain the height of outer (secondary) cusp of first upper incisor, while in *P. abramus,* tip of second upper incisor exceeds the height of outer (secondary) cusp of first incisor. First upper premolar in *P. paterculus,* though small (equals second upper incisor in area), is well visible in lateral view; canine and second upper premolar are not in contact. In *P. abramus,* first upper premolar is quite small (its area less than that of second upper incisor), and practically concealed behind the posterior cusp of canine so that it is nearly invisible in lateral view; canine and second upper premolar are nearly or actually in contact. Baculum in *P. abramus* has a double sigmoid curvature, 10-12 mm long and its terminal prongs less developed, while that in *P. paterculus* is almost straight (with an indication of incipient curvature), more than 9 mm long, its terminal prongs well developed and form nearly a complete ring at an angle of 45° to the shaft.

Allen (1938) considered *Pipistrellus abramus* as a monotypic species, and synonymised *Vespertilio irretitus* Cantor, 1842 (type-locality: Chusan Island, Chekiang, China) and *Scotophilus pumiloides* Tomes, 1857 (type-locality: ? China) with it. Tate (1942) synonymised *Vespertilio akokomuli* Temminck, 1840 (type-locality: Japan) with *abramus;* considered *irretitus* as the mainland representative of *abramus;* referred *pumiloides* to *abramus* group, at the same time mentioned that it was virtually inseparable from the topotypes of *abramus,* and treated *paterculus* as a small representative of the *abramus* group. Wallin (1969) considered *abramus* as a polytypic species and put *akokomuli, irretitus* and *pumiloides* under the synonymy of the nominate subspecies. Corbet (1978) treated *abramus* as a subspecies of *Pipistrellus javanicus* and synonymised *akokomuli, irretitus* and *pumiloides* with *abramus.* Again, Wang (1982) considered both *abramus* and *paterculus* as polytypic species. From a comprehensive study of bacula, Hill and Harrison (1987) have established that *javanicus, abramus, paterculus,* among others, are distinct species under the *javanicus* subgroup of the *Pipistrellus* group, as recognised by them. These authors included *akokomuli, irretitus* and *pumiloides* under *abramus.* Thus, whether *Pipistrellus abramus* (as understood by Hill and Harrison 1987) is divisible into more than one subspecies can only be known when sufficient material from its vast distributional range is studied.

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* Not seen in original.

4. NEW DISTRIBUTIONAL RECORD OF *PETAURISTA FULVINUS* WROUGHTON, 1911 (MAMMALIA: RODENTIA: SCIURIDAE), WITH COMMENTS ON ITS TAXONOMIC STATUS

Petaurista fulvinus Wroughton, was till now known only from Shimla (Shimla district, Himachal Pradesh, India), its type-locality. During the course of a faunistic survey of Dudwa Tiger Reserve in the terai and the surrounding areas in Kheri district of Uttar Pradesh, a male specimen of this taxon was collected, while feeding on a mango tree. This constitutes the first authentic record of this form from the area, and extends its distributional range much further to the southeast.

The taxonomic status of *Petaurista fulvinus* has been a subject of controversy. Wroughton (1911) described this taxon on the basis of a single specimen. Robinson and Kloss (1918) and Ellerman (1940) maintained *P. fulvinus* as a distinct species. But, Ellerman and Morrison-Scott (1951), and Ellerman (1961) synonymized it with *Petaurista petaurista albiventer*. Ellerman (1961)